

PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	Enablers and barriers to newborn screening for sickle cell disease in Africa: results from a qualitative study involving programs in six countries
AUTHORS	Archer, Natasha; Inusa, Baba; Makani, Julie; Nkya, Siana; Tshilolo, Léon; Tubman, Veneé; McGann, Patrick; Ambrose, Emmanuela; Henrich, Natalie; Spector, Jonathan; Ohene-Frempong, Kwaku

VERSION 1 – REVIEW

REVIEWER	Chudleigh, Jane City University, School of Health Sciences
REVIEW RETURNED	01-Nov-2021

GENERAL COMMENTS	Thank you for sharing this informative, important and well written paper. Attached are some minor comments, mainly editing. I wonder if it might be beneficial to include reference to some additional literature in the introduction that sets the scene in terms of setting up NBS for SCD globally and/or setting up NBS for other conditions (see attached suggestions).
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REVIEWER	Ladu, Adama University of Maiduguri, Haematology
REVIEW RETURNED	06-Nov-2021

GENERAL COMMENTS	<p>The current study sought to characterize enablers and challenges for conducting newborn screening (NBS) for sickle cell disease (SCD) across six African countries. The background of the study demonstrates the significance of NBS in improving the quality of life of SCD individuals and the paucity of such programs in Africa. The current study is therefore timely and highly relevant, as this is one of the largest studies of enablers and barriers to successful implementation and sustainability of SCD NBS programs in Africa, where no national-level programs currently exist.</p> <p>The use of a qualitative research approach provides a good methodology for an in-depth analysis of the factors mitigating or facilitating the adoption of NBS in underdeveloped nations. By being iterative and conducting a second phase of interview, the authors provided a deeper exploration of enablers and challenges to the establishment and the sustainability of NBS. The four major themes and sub-themes that emerged from the current study, along with participant quotes, provide evidence-based and pragmatic determinants of the successes and barriers to NBS in Africa. More research like this is needed to inform the setting up and sustainability of such programs; the current study, therefore,</p>
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	<p>provides high-level guidance for stakeholders and policymakers seeking to establish NBS for SCD.</p> <p>The article was interesting to read and used appropriate and up-to-date references. Below are a few observations for the author's consideration:</p> <ol style="list-style-type: none"> 1. The recruitment process was well described along with the process of member checking; however, please clarify if member checking was applied to all the participants from the six countries and whether they have all been included in the manuscript? 2. Please, clarify if any of the study team members also acted as a participant? If so, what measures were taken to mitigate their position and views from affecting the validity of the findings? And please explain how was reflexivity ensured? 3. There was a clear trail of the data collection process (study advert through email, participant recruitment, and consent, etc), however, please explain who carried out the interviews, their training/experience and how was the quality of the interview ensured?
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VERSION 1 – AUTHOR RESPONSE

Reviewer 1 comments

Abstract-Objectives section: I think this should be newborn bloodspot screening throughout to differentiate it from other types of newborn screening.

The manuscript has been updated as requested. We have added that clarification in the abstract and main text, and indicate that newborn bloodspot screening is referred to throughout as NBS.

Introduction section: I wonder if it might be beneficial to include reference to some additional literature in the introduction that sets the scene in terms of setting up NBS for SCD globally and/or setting up NBS for other conditions. Suggested references: Explored NBS programs for SCD globally e.g. Lobitz S, Telfer P, Cela E, Allaf B, Angastiniotis M, Backman Johansson C, Badens C, Bento C, Bouva MJ, Canatan D, Charlton M, Coppinger C, Daniel Y, de Montalembert M, Ducoroy P, Dulin E, Fingerhut R, Frömmel C, García-Morin M, Gulbis B, Holtkamp U, Inusa B, James J, Kleanthous M, Klein J, Kunz JB, Langabeer L, Lapoumériou C, Marcao A, Marín Soria JL, McMahon C, Ohene-Frempong K, Péroni JM, Piel FB, Russo G, Sainati L, Schmugge M, Streetly A, Tshilolo L, Turner C, Venturelli D, Vilarinho L, Yahyaoui R, Elion J, Colombatti R; with the endorsement of EuroBloodNet, the European Reference Network in Rare Haematological Diseases. Newborn screening for sickle cell disease in Europe: recommendations from a Pan-European Consensus Conference. *Br J Haematol*. 2018 Nov;183(4):648-660. doi: 10.1111/bjh.15600. Epub 2018 Oct 18. PMID: 30334577 AND Therrell BL Jr, Lloyd-Puryear MA, Eckman JR, Mann MY. Newborn screening for sickle cell diseases in the United States: A review of data spanning 2 decades. *Semin Perinatol*. 2015 Apr;39(3):238-51. doi: 10.1053/j.semper.2015.03.008. PMID: 25979783. OR literature that explores setting up NBS programs for other conditions e.g. Therrell BL Jr, Padilla CD. Newborn screening in the developing countries. *Curr Opin Pediatr*. 2018 Dec;30(6):734-739. doi: 10.1097/

The manuscript has been updated with the addition of the reference by Therrell. Please note that the first reference stated had already been included. Regarding the possibility of discussing newborn screening for conditions other than sickle cell disease, we agree that is an interesting and important topic but we feel that (even in the background section) it would be outside the scope of this paper and would add undue length to the manuscript.

Introduction section: consistently use abbreviation NBS.

The manuscript has been updated accordingly: we have added that clarification in the abstract and main text, and indicate that newborn bloodspot screening is referred to throughout as “NBS.”

Methodology section: for consistency, include team members’ initials for everyone’s expertise.

The manuscript has been updated accordingly, and also we have provided additional description of the study guide creation process: i.e., that the process of developing the interview guide was led by the team’s qualitative researcher (NH) with input from a study team member with extensive knowledge about SCD newborn screening programs in Africa (KOF) and from study team members with general expertise on SCD (JS, NA).

Methodology section: were interviews transcribed verbatim?

The interviews were transcribed verbatim and the manuscript has been updated to state this clearly in the Methodology section.

Results section: As per the abstract, it might read better if the word 'aspects' was only used at the end of this sentence rather than repetitively with each theme.

The manuscript has been updated: use of the word “aspect” has been limited.

Results section: which countries were included?

Throughout the manuscript our general approach has been to present the findings as patterns of learnings from the collection of countries rather than linking results to specific programs/countries. We felt this to be an important guiding principle since the purpose of this research is not to applaud or admonish the actions of stakeholders in any particular country, but rather to present lessons learned in a constructive fashion. Note that we did make exceptions to this approach in certain circumstances where it seemed appropriate and advantageous to strengthen the manuscript, and as such there are some parts of the manuscript where specific events or learning are linked with individual countries.

Results section: pointed (not point)

The manuscript has been updated accordingly and the revision has been made.

Results section: Should heel pricks be changed to heel sticks?

The co-authors recognize that both terms are used commonly in practice in Africa and in the literature. We understand that practitioners in various countries may have different preferences for which term is used. We have therefore kept the term in its current form in this revision. However, if the Reviewer/Editor feels strongly that we change it then we will be happy to make that adjustment.

Results section: remove “in” before tracking

The manuscript has been updated accordingly and we have removed the word “in.”

Results section: change “reachable” to “contactable”

The manuscript has been updated and we have adjusted the word as suggested.

Results section: Missing word “used” before HPLC

The manuscript has been updated and we have added the missing word.

Discussion section: remove “and” and replace with a comma

The manuscript has been updated accordingly.

Reviewer 2

Please clarify if member checking was applied to all the participants from the six countries and whether they have all been included in the manuscript?

The manuscript has been updated to reflect the methodology that all participants were provided the opportunity for member checking.

Please, clarify if any of the study team members also acted as a participant? If so, what measures were taken to mitigate their position and views from affecting the validity of the findings? And please explain how was reflexivity ensured?

The manuscript has been updated to state that one study team member was also a participant. In addition, we have added description of that team member's specific role and provided rationale for how bias was mitigated.

Please explain who carried out the interviews, their training/experience and how was the quality of the interview ensured?

The manuscript has been updated to state which team members conducted the interviews and to list their qualifications/training. An additional step to ensure the quality of the interviews was audio recording and verbatim transcription, and these processes are also described in the text.

VERSION 2 – REVIEW

REVIEWER	Chudleigh, Jane City University, School of Health Sciences
REVIEW RETURNED	04-Jan-2022
GENERAL COMMENTS	Thank you for addressing the previous comments, this is a well written and interesting paper that addresses an important topic.